

Land Redevelopment and Public Health: Opportunities for Designing and Building Healthy Places

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Agency for Toxic Substances and Disease
Registry



Brownfield Redevelopment: Public Health Goals:

Disease Prevention
and
Health Promotion



Source: Smart Growth
and Neighborhood
Conservation, Maryland





Northwestern Barrel Co, circa 1955

Northwestern Barrel Co

- Barrel reclamation 1940 to 1964
- 40 apartments built in 1964
- 1996 investigation found high levels of contamination in soils
- Urgent Public Health Hazard
- Condo residents worried about their health and property values
- 1997 to 2002 removal > 180,000

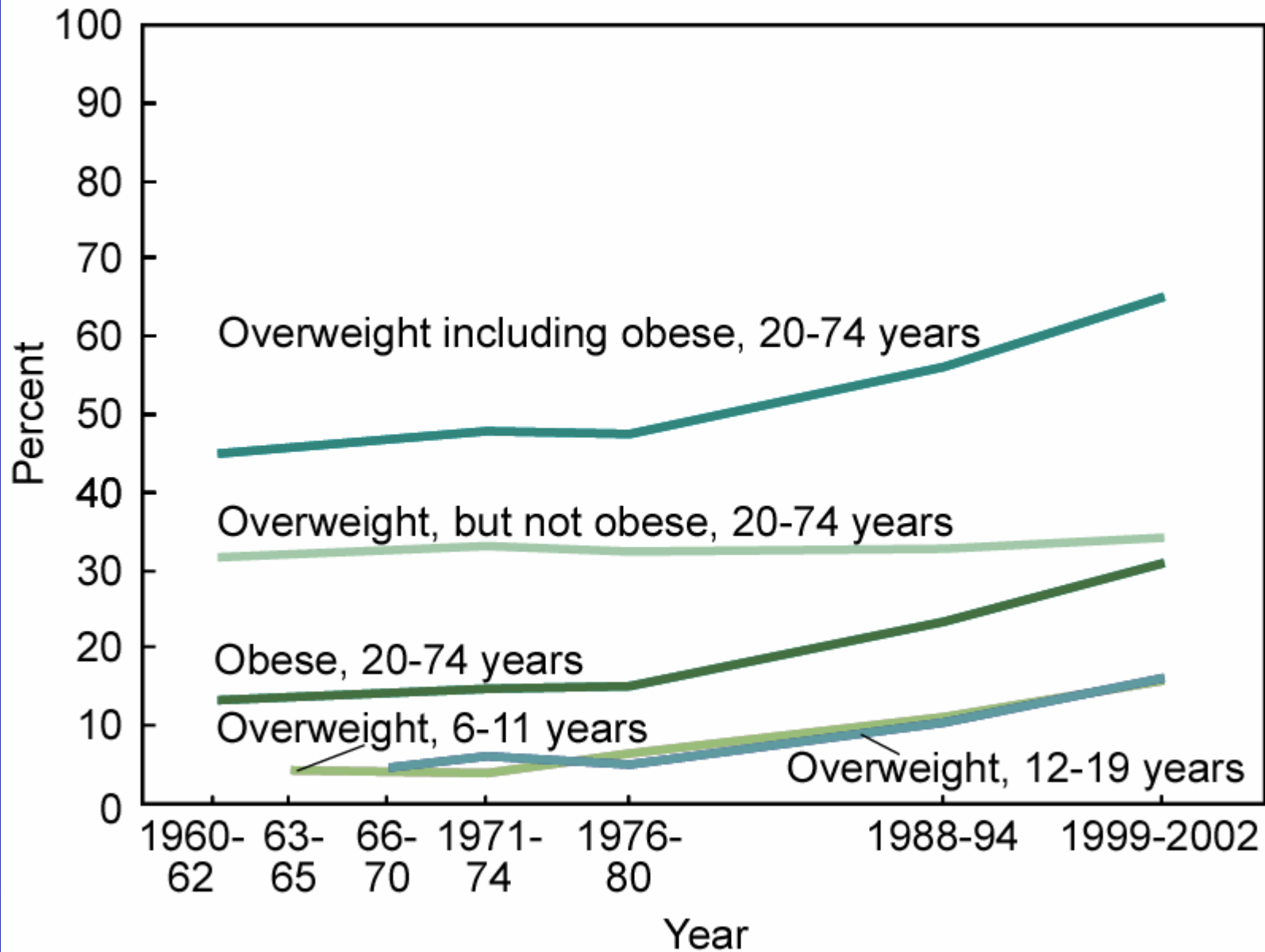
Northwestern Barrel *Co*

- 1997 removal released solvents, caused odor & health complaints
- Outdoor Inhalation exposures not a health hazard
- Indoor vapor intrusion ruled out in 2003.
- Cleanup of residential soils continuing in 2005.





Overweight and obesity



SOURCE: Centers for Disease Control and Prevention, National Center for Health Statistics, *Health, United States, 2005*, figure 15.

Overweight

Increasing weight associated with:

- ↑ risk of overall mortality (up to 2.5-fold at age 30-44, less at older ages)
- ↑ risk of cardiovascular mortality (up to 4-fold at age 30-44, less at older ages)
- ↑ risk of diabetes (up to 5-fold)
- ↑ risk of hypertension
- ↑ risk of some cancers
- ↑ risk of gall bladder disease

Source: Willett et al., *New Eng J Med*, 1999





Fine



Food



Physical Activity

A sedentary lifestyle increases the risk of

- overall mortality (2 to 3-fold)**
- cardiovascular disease (3 to 5-fold)**
- some types of cancer, including colon and breast cancer**

The effect of low physical fitness is comparable to that of hypertension, high cholesterol, diabetes, and even smoking.

Sources: Wei et al., *JAMA* 1999;
Blair et al., *JAMA* 1996

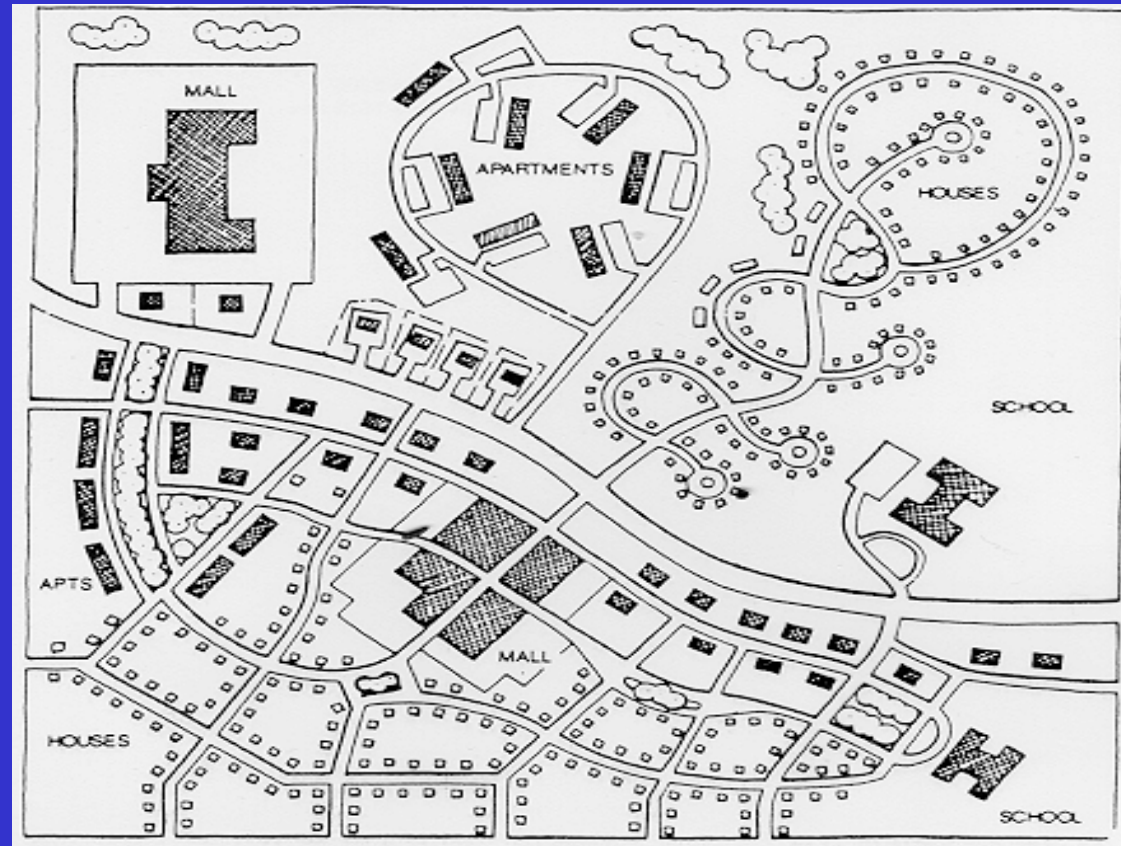


Walkable Community Designs: Connectivity and Physical Activity

Suburban
Development



Traditional
Neighborhood



Drawing by Duany Plater Zyberk,
in ITE Journal 1989;59:17-18



The result



April 22, 2003



A photograph of a pedestrian crossing sign. The sign is rectangular with a black background and orange border. It has the words "WALK" in blue, "CANT" in yellow, and "WALK" in yellow. The sign is mounted on a pole.

By Martha T. Moore
USA TODAY

Why don't Americans walk anywhere?
Old answer: They're lazy.
New answer: They can't.
There is no sidewalk outside the front door, school is 5 miles away, and there's a six-lane highway between home and the supermarket.
Many experts on public health say the way neighborhoods are built is to blame for Americans' physical inactivity — and the resulting epidemic of obesity.
The health concern is a new slant on the issue of suburban sprawl, which metro regions have been struggling with for a decade. These health experts bring the deep-pocketed force of private foundations and public agencies into discussions about what neighborhoods should look like.

The argument over whether suburbs are bad for your health will hit many Americans precisely where they live: in a house with a big lawn on a cul-de-sac.
"The potential for actually tackling some of these things, with the savvy of the folks who have tackled tobacco, is enormous," says Ellen Vanderslice, head of America Walks, a pedestrian advocacy group based in Portland, Ore.
A study by the federal Centers for Disease Control and Prevention is tracking 8,000 residents of Atlanta to determine whether the neighborhood they live in influences their level of physical exercise. The Robert Wood Johnson Foundation in New Jersey,

Cover story

The way cities and suburbs are developed could be bad for your health

Please see COVER STORY next page ►



Crown Quality
CLEANER

FOOD
STORE





Durham, NC

THE SOFT-MONEY
CRACKDOWN

E-GOVERNMENT:
THE NEW GENERATION

TUITION BREAKS FOR
ILLEGAL IMMIGRANTS

Governing

The Magazine of States and Localities

Edge-ucation

The Compulsion to Build Schools
In the Middle of Nowhere





Hubbard Lake Elementary School, Hubbard Lake, Michigan
"Outstanding in Its Field"

* CANINE CONSTITUTIONAL



Tom Raveall / Chicago II

A brisk walk in the park keeps Macey II in shape between dog shows. His owner, Columbus resident Cathy Stumbo, got up early

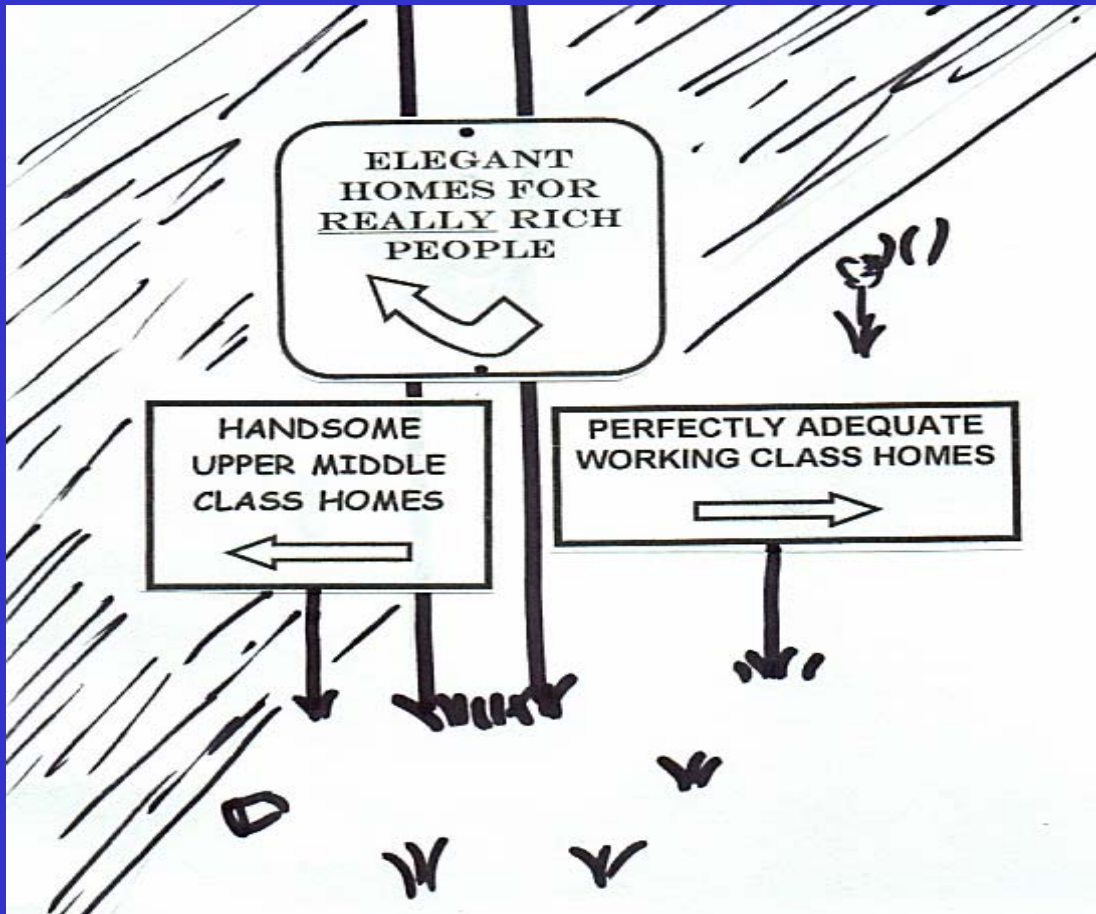
to give her 3-year-old Doberman his regular workout. They typically log 15 miles in Berliner Park.

Underutilized Urban Housing Stock





Community Design and Income Inequality



Community Design and Income Inequality



Transportation Planning and Land Use Choices

Will 23 lanes be enough?

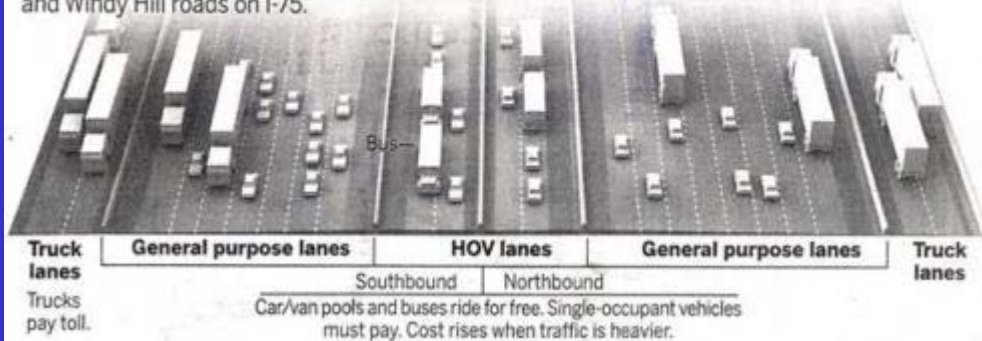
Proposal would
put I-75 among
country's biggest

By ARIEL HART
ahart@ajc.com

It's wider than an aircraft carrier.
Far wider than the carving on Stone
Mountain. Wider than the White
House stretched end to end, twice.

It's the planned I-75, all 23 lanes,
coming soon to Cobb County. As cur-
rently conceived it's 388 feet across,
wider than a football field is long.

23 LANES: The state Department of Transportation is planning to expand I-75 (below) and I-575 in Cobb and Cherokee counties. The 23-lane stretch would be between Delk and Windy Hill roads on I-75.



Traffic heads north on I-75, just north of I-285, on Thursday. A proposal for the interstate is enough to make a road builder weep with joy, and make others wonder whether it's overkill.

Source: Atlanta Journal-Constitution, March 10, 2006





Air quality

Asthma outbreak hits kids RISKS OF THE 'RED ZONE'



JENNI GIRTMAN / Staff

Asthma sufferer Tyrone Johnson, 2, breathes fresh air Friday as his aunt Susan Thomas tends him at Atlanta's Hughes Spalding Children's Hospital. Sky-high smog readings in metro Atlanta have produced a flare-up of asthma cases, especially among children.

The Atlanta Journal-Constitution

SATURDAY, AUG. 19, 2000

Asthma and Air Pollution

- Natural experiment during 1996 Summer Olympic games in Atlanta
- Peak morning traffic decreased 23% and peak ozone levels decreased 28%
- Asthma-related emergency room visits by children decreased 42%
- Children's emergency visits for non-asthma causes did not change during same period



Deaths and Injuries to Motor Vehicle Occupants and Pedestrians

- Leading cause of deaths among persons 1-34 years old
- Annual U.S. toll from motor vehicle crashes:
 - 42,000 deaths
 - 3 million nonfatal injuries
 - \$230 billion in costs

Sources: CDC, 2000 and
NHTSA, 2002



Car Crashes





Self-reported aggressive driving behaviors (% respondents in each category)

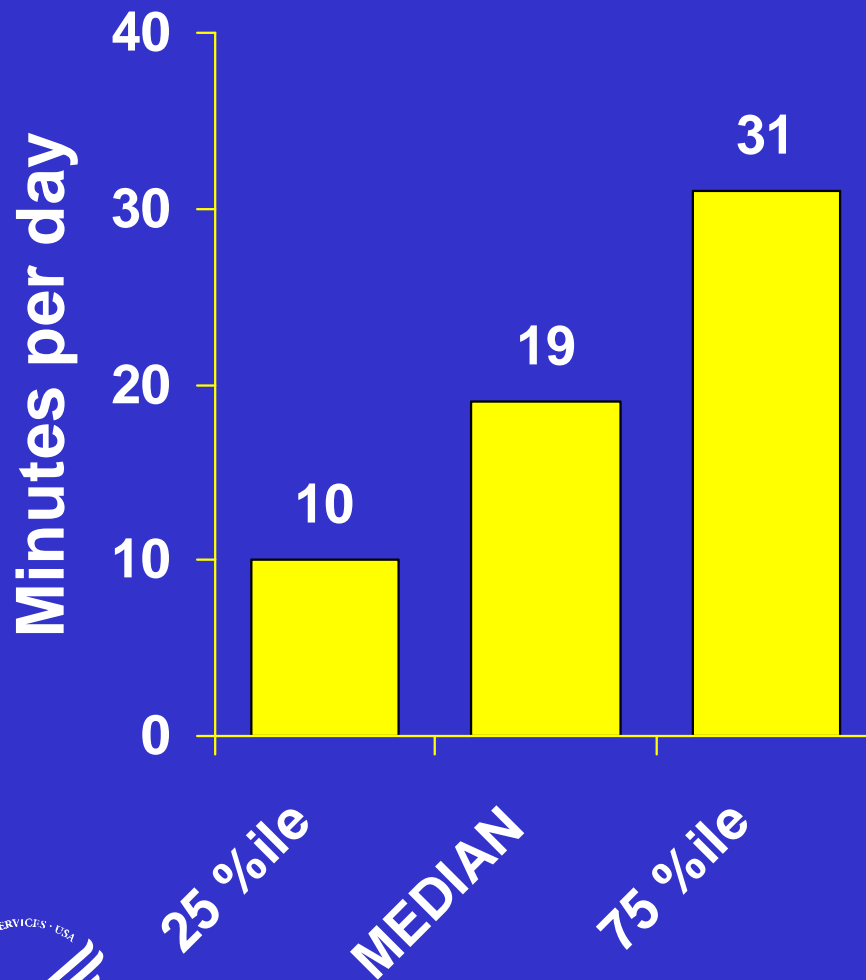
	Never	Rarely	Some- times	Often
Say bad things to yourself about other drivers	15.3	22.9	39.5	22.1
Complain or yell about other drivers to a passenger in your vehicle	25.5	22.2	39.0	13.1
Give another driver a dirty look	41.8	17.6	32.7	7.7
Honk or yell at someone	61.1	17.9	17.9	2.9
Keep someone from entering your lane because you are angry	80.2	12.9	5.9	0.8
Make obscene gestures to another driver	83.7	9.2	6.1	0.8
Think about physically hurting another driver	89.0	5.4	4.4	1.1
Make sudden or threatening moves to intimidate another driver	94.6	4.0	1.1	0.1
Follow or chase another driver in anger	96.5	3.2	0.3	0.0



Source: MSU SSRC, 2000



Minutes of Walking To and From Public Transit Per Day



Data from National Household Travel Survey, 2001, USDOT
N= 3312 transit users

Besser LM, Dannenberg AL
Amer J Prev Med 29:273, 2005

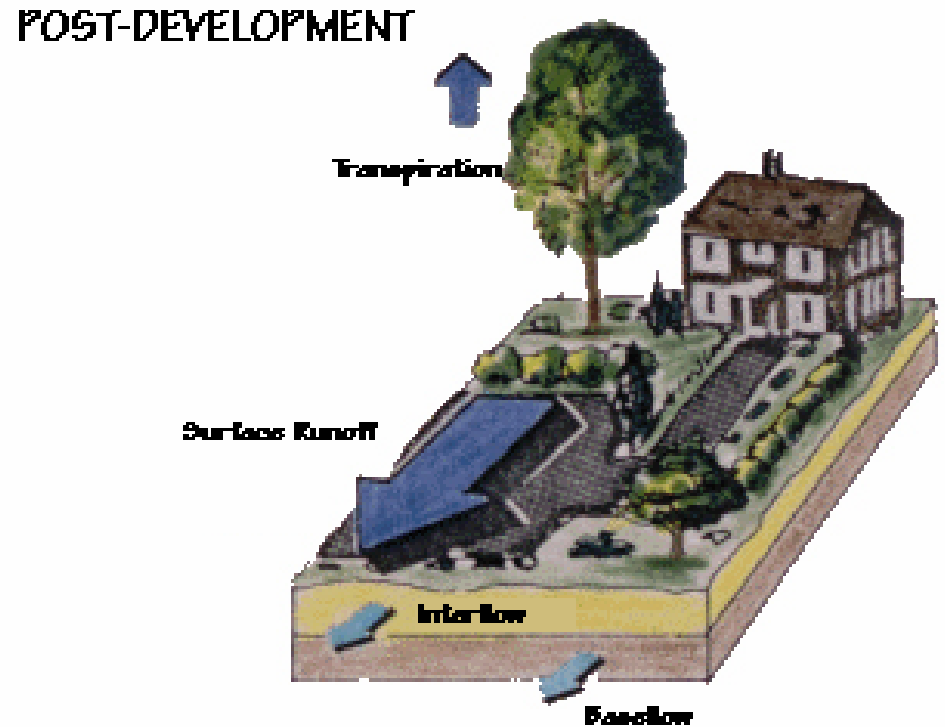
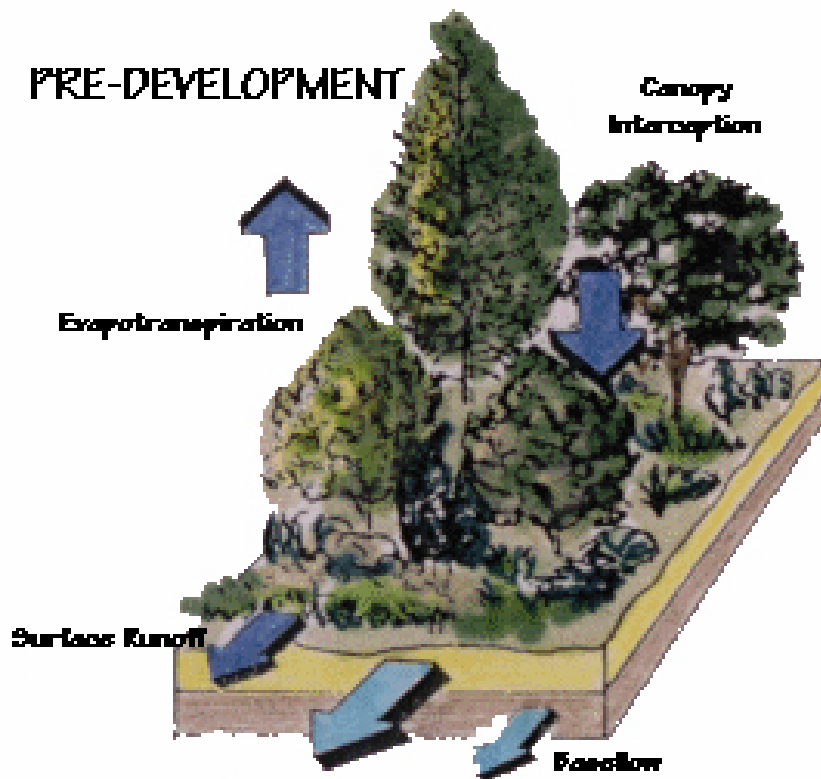


Water Quality

- Increased numbers of roads and parking lots lead to increased non-point source water pollution and contamination of water supplies (road runoff of oil/gas, metals, nutrients, organic waste, etc) with possible impact on human health
- Increased erosion and stream siltation causes environmental damage and may affect water treatment plants

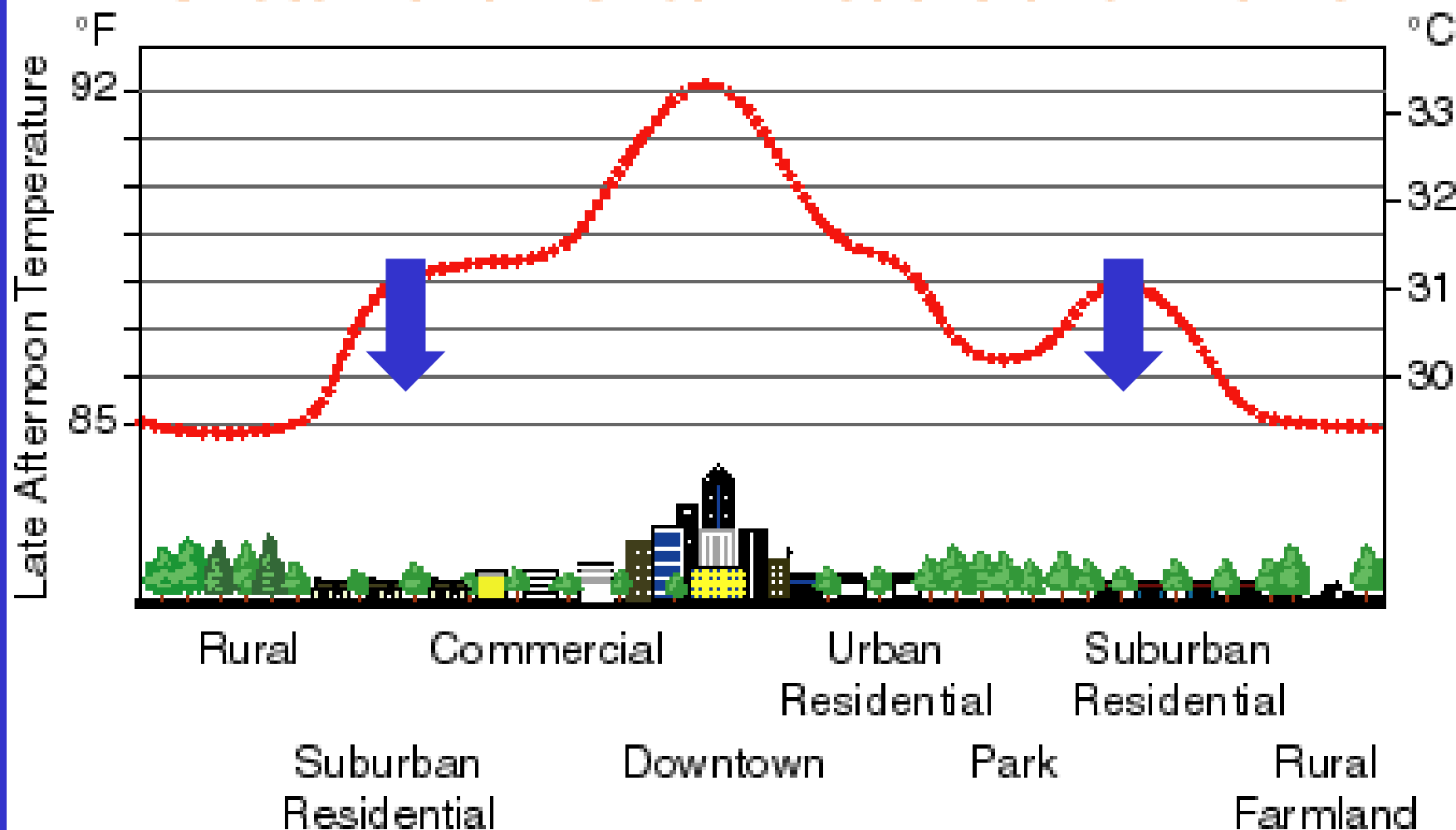


WATER BALANCE



Source: Center for Watershed Protection

Sketch of an Urban Heat-Island Profile



Mental Health Issues that may Relate to Community Design

- **Depression**
 - Relieved by physical activity and social interaction
- **Stress**
 - Aggravated by long commutes
- **Attention Deficit-Hyperactivity Disorder**
 - ? Related to limited opportunities for outdoor play
 - Greenspace may improve function in ADHD
- **Violent Behavior – Impulse Control**
 - Example: road rage



Social Capital

Defined as social
networking,
civic
engagement,
trust and
reciprocity

- Decreased by
long commutes



Sprawl and social capital

- ↑ commute time → ↓ social capital (Putnam)
- Inability to “age in place”
- Absence of “third places”
- Enforced, and reinforced, income inequality

Envisioning Change



*Community design and
land use choices can
either promote or harm
human health*



www.cdc.gov/healthyplaces

www.epa.gov/smartgrowth



ATSDR



Thank
you!